

Maternal health care utilisation in Teso District

Lawrence D.E. Ikamari

*Population Studies and Research Institute, University of Nairobi,
P. O. BOX 30197, Nairobi; Fax #336885, Nairobi, Kenya*

SUMMARY

This paper sets to establish the level of awareness of antenatal care, the timing of antenatal clinic visits, the level of utilisation of maternal health care, to identify the main service providers, and existing barriers to the utilisation of maternal health care in Teso District. Data and information collected in Teso District between the year 2000 and 2001 is used. Descriptive statistics are the main tools of data analysis. The results obtained indicate that most respondents in the study area are aware of the importance of antenatal care, the majority seek antenatal care but late in pregnancy and make very few antenatal visits, and that most of the childbirths take place at home mainly because of lack of access to institutionalised care; quick means of transport, inability to meet user charges and associated costs, the availability of cheap and more accessible alternative care providers such as traditional birth attendants (TBAs), and the poor quality of services offered at the local health facilities. The traditional birth attendants and nurse/midwives are the main providers of maternal health care. The obstacles to utilisation of maternal health care are manifold. The major constraints are unavailability and inaccessibility of health facilities, poverty, exorbitant user charges and associated costs, and poor services offered at the local health facilities. Reducing or removing these obstacles would result in increased utilisation of maternal health care in the study area.

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Introduction

The importance of provision and utilisation of maternal health care in enhancing child survival and reducing maternal morbidity and mortality has long been recognised [1, 2, 3, 4, 5]. Many scholars consider health care services as being very important in determining the overall mortality levels in developing countries. This importance has been illustrated by case studies of China, Kerala State of India, Sri Lanka and Costa Rica [6, 7]. In the recent past a number of studies have investigated the relationship between use of maternal and child health care and child survival. Nag (1985) indicated that greater access and utilisation of health facilities in Kerala State in India was the most important factor that placed Kerala in a better mortality position in comparison with West Bengal in India [8].

The 1985 United Nations comparative study of effects of socio-economic factors on child mortality in Nigeria and Peru (the only two countries that had appropriate data on health care) indicated that both access and utilisation of health services were positively associated with child survival [9]. Other studies show that the use of health services is positively associated with child survival [10, 11, 12, 13]. Ewbank and Gribble (1993) argued that the provision and utilisation of health services was one of the factors closely associated with the decline in infant and child mortality in sub-Saharan Africa [14]. A study carried out in Addis Ababa, Ethiopia, in 1981-83 indicate that maternal mortality for women who had received antenatal care was significantly lowered than that for women who had not received any antenatal care.

The study found a maternal mortality rate of 2.4 per 1000 for women who had received antenatal care as compared with 6.2 per 1000 for those who had not received antenatal care. These figures exclude abortion deaths. The study also found that most of the maternal deaths occurred at home either during childbirth or immediately after childbirth [15]. In Zambia, a study conducted in 1982-83 in the University Teaching Hospital of Lusaka found that maternal mortality in Lusaka was closely associated with health care provider and utilisation deficiencies, lack of antenatal care, unwanted pregnancies, home deliveries and low economic status [16].

A study carried out in rural Bangladesh found that most of the childbirths took place at home and that most of the maternal deaths occurred among the mothers who delivered at home. The study also found that obstructed labour was the most common cause of maternal death and very few of the women with obstructed labour and none of the eclampsia cases received any antenatal medical care [17].

Maternal and child health care can be categorised as care provided before, during and after a woman gives birth. The health care that a mother receives before childbirth consists of regular periodic check-up of the pregnancy, advice on the appropriate diet, treatment of any pregnancy related complications, and tetanus injection to prevent neonatal tetanus which has been shown to be a major cause of infant deaths in developing countries such as Kenya [18]. The World Health Organisation recommends that all women receive two toxoid injections during the first pregnancy, a third dose to 12 months later or during their next pregnancy, a fourth dose at least a year later or during the subsequent pregnancy, and a fifth dose taken at least one year later or during the subsequent pregnancy. This fifth dose is thought to provide lifelong protection [19]. This group of health care constitutes antenatal care. However, the number of antenatal care visits which have impact on maternal, perinatal and neonatal survival has been a subject of controversy, many believing the critical number may be as few as four [20].

Antenatal care provides a variety of preventive interventions for pregnant mothers. These include tetanus immunisations, nutrition education, and counselling about their plans for delivery and

postpartum family planning. In Kenya, as in many other sub-Saharan countries, antenatal clinics provide prophylaxis against malaria and anaemia, which are important pregnancy complications, especially in the proposed study district [21, 22]. Attendance of antenatal clinics also allows women who have known risks to be identified and monitored, and subsequently, referred for delivery care to the appropriate health facility. Pre-existing and new medical problems such as malaria, anaemia and syphilis can also be detected and managed during antenatal visits. It is also during such visits that service providers can develop rapport with women, making them more likely to seek assistance during labour and delivery [23].

The number and timing of antenatal care visits are considered important to preventing adverse pregnancy outcome [24]. Antenatal care is considered most effective if the visits are started early during the pregnancy and continue at regular intervals through the pregnancy. It is generally recommended that antenatal care visits be made monthly for the first seven months, fortnightly in the 8th month and then weekly until delivery. If this visit is made at the third month of pregnancy, this schedule translates to a total of about twelve to thirteen visits [25].

Studies indicate that most non-abortion maternal deaths occur around the time of labour and delivery or within the few hours after birth [26, 27]. Many potentially fatal complications occur about this time not only to high risk women but also to women who do not fall into the traditional high risk groups and are therefore difficult to predict or prevent. Studies in Kenya indicate that the majority of non-abortion maternal deaths are due to direct obstetric causes such as haemorrhage, obstructed labour and puerperal complications, especially sepsis. The large number of maternal deaths resulting from direct obstetric causes have been attributed to the limited health facilities serving a large number of clients and to the long distance the majority of expectant mothers have to travel to reach the nearest maternity facility [28], and to the shortcomings in the health service [29, 30, 31].

In Kenya, the majority of mothers deliver their babies at home often without medical supervision [32]. It has also been found that most of the maternal deaths in Kenya occur among mothers

who deliver at home or /and stay away from health facilities [20]. In such cases, access to services where obstetric complications can be managed is essential in preventing maternal deaths. While in many situations, the majority of births occur at home, prompt recognition and referral of the women who experience complication can save lives. Attendance by medically trained persons during labour and delivery can facilitate such referral or management and treatment of such complications.

Maternal health after delivery (post-natal care) includes both preventive and curative medical care. Post-natal care for mothers includes examination of her nutritional status, treatment for anaemia, and advice on diet, childcare, breastfeeding, weaning and family planning. The major preventive care is the immunisation of the children against major childhood diseases (TB, diphtheria, poliomyelitis, whooping cough, and measles). Curative care involves the detection of illness, the selection of the type of treatment the child receives, the timing of seeking treatment, and the effectiveness of the selected treatment. Thus, utilisation of maternal care can significantly reduce puerperal sepsis, which has been found to be one of the major causes of maternal deaths in Kenya [26, 20].

Since 1967, the Kenya government has been promoting an integrated MCH/FP programme with the twin objective of enhancing the welfare of both mothers and children and reducing fertility and thus checking the rapid population growth. The MCH component of the programme has been, by and large, successful though there are significant regional variations in the utilisation of the MCH services in the country, with a majority (over 65 per cent) of expectant mothers having home deliveries attended by traditional birth attendants or their relatives.

In the literature a number of factors have been cited to affect utilisation of maternal health care. Stewart and Sommerfelt, using the DHS I data for Bolivia, Egypt and Kenya, found that the use of maternal health care (tetanus toxoid immunisation, delivery services) are influenced by a myriad of social, cultural and economic factors [29]. They found that the use of maternal health care was positively and significantly associated with urban residence and education. Urban and educated women were more likely to use antenatal care than

rural and uneducated women. Similarly, women whose husbands had no education were less likely than those whose husbands were educated to use maternal health. Surprisingly, household wealth was positively and significantly associated with the use of maternal health. In Bolivia women who had never used family planning were less likely to be attended at delivery by medical personnel. In Bolivia and Egypt children of such mothers were also at increased risk of not receiving prenatal care.

Maternal age and parity have also been examined as determinants of maternal health use, although the relationships demonstrated have not always been consistent [29, 30, 31]. For example, Stewart and Sommerfelt found that it was only in Kenya that maternal age was significantly associated with prenatal care [29]. Complications during labour and delivery are thought to have an effect on service use [32], and previous exposure to or experience with modern health services may have an impact as well [30].

The results obtained in the 1993 and 1998 KDHS indicate that women aged 35 years or older were much more likely than younger women to deliver at home. The study also found that women who received antenatal care from a clinic were more likely to deliver at a health facility than women who did not have such a contact. Age of the mother and birth order of the child was closely associated with choice of place and service provider. Older women, and women who already had many children were more likely to receive no assistance at delivery. First births and births of younger women were more likely to be delivered at health facility under medical supervision. Educational differentials exist in antenatal care. Educated women are depicted as being more likely than their uneducated mothers to use antenatal care. Urban women are depicted as being more likely than rural women to use antenatal care. Similarly, there are notable differences in antenatal care on the basis of current province of residence. Mothers residing in Coast, Nairobi, Rift Valley provinces were more likely to use antenatal care than women residing in other provinces covered during the survey. The two surveys indicate significant regional variation in the percentage of children delivered at home with Western province having the highest percentage (73 %) of the births delivered at home [28].

Studies carried elsewhere have found similar results. For example, in Nepal, the age of the mother and her parity have also been found to affect the use of maternal health services. Women of middle age (25-34 years) are more likely to use the services than the younger and older women. Younger women are more restricted in household decisions: lack of autonomy hinders them from seeking and using maternal health services. Furthermore, younger women have fewer children and are less need of maternal health services. Older women are more traditional and want to keep with traditional modes of health care and also tend to distrust modern medicine [33].

Service utilisation does not occur in a vacuum. Availability of services, including both physical and social access, and the cost and quality of care are important factors that influence the decision to seek care [31,34]. Distance to the nearest health facility was found to be one of the major determinants of institutionalised delivery use in Asia [33, 35]. For example, Niruala in 1994 found that in Nepal, people who were close to the roads where a health facility was located were more likely to use health services than people who were far away [33].

Fear, particularly among women with limited exposure to the world outside their homes, has been indicated in the literature as an important factor in determining choice of place of delivery and type of assistance at delivery [36, 37,38]. For instance, a study carried out in India found that despite easy access to health facilities, 94 per cent of the Uttar Pradesh births were delivered at home and attended by untrained personnel (mostly relatives and friends). Even the Uttar Pradesh women who lived in Delhi chose home more often as the best locale for a delivery. The preference for home and attendance of close relatives and friends among the Uttar Pradesh women was mainly attributed to fear of the unfamiliar hospital or health facility environment and personnel. The Uttar Pradesh women have very limited exposure to the world outside their homes, most of them are poor, uneducated and have low status in the society. The second reason given for reluctance to deliver in hospital was the sheer physical inconvenience associated with hospital delivery. The actual costs incurred could be prohibitive to the average person, leave alone the poor village

woman. These costs include transport expense to the hospital, charges for delivery and any drugs used. The additional cost includes the need for efficient help to run the home and make daily trips to the health facility with food and necessities for the new mother and baby [36].

In some communities, such as the Tamacheq of Mali, childbirth is an extremely private affair that should only be attended by very close female relatives. Expectant mothers would prefer to die than to expose themselves to male health workers during labour and childbirth at health facility. As a result of this profound fear and the fact that childbirth is a private affair, among other factors, expectant mothers deliver their babies at home under the care of their very close female relatives [38].

Traditional beliefs and old-fashioned ideas about modern medicine have been cited in the literature as some of the reasons for none-use or low use of maternal health care services in some rural communities [39,40,7, 38]. However, some scholars have discounted such explanations [19, 41, 42, 43, 44, 45]. The studies of these scholars indicate that it is not the traditional beliefs but rather often the services are inadequate and insensitive and that service providers fail to communicate with the clients. For example, women living in a Moroccan slum resorted to traditional medicine not out superstition or failure on their part but rather as result of lack of a better alternative [42]. Young (1981) found that poor and uneducated Mexican villagers were aware of the benefits of modern medicine, but most often they do not utilise modern health services because the services are inaccessible [41].

A recent study in a rural areas of Nigeria found that in addition to the above factors, hostility between TBAs and midwives were a constraint to use of maternal care services [43]. Similarly, a recent study in Zimbabwe indicates inadequate facilities and poor services were the major problems identified by women that influenced them not to seek care from the rural health centres (RHC). The RHC lacked emergency transport, had inadequate facilities for dealing with pregnancy complications, there was no food after consultations or delivery, some nurses were inconsiderate and there were always delays in being served [23]. In fact, shortcomings of health

services such as the shortages of drugs and/or trained personnel and careless handling of patients have been found to significant contributory factors of maternal deaths in many developing countries [44,45, 46].

Research Problem

Although maternal health services have been provided in the country since the 1960s, little is known about their level of utilisation in Teso district, which was recently created from the old Busia district. All the recent national demographic and health surveys did not cover this district. Neither was it covered when it was part of the old Busia district. There is lack of information on the coverage of maternal health care in the district. In particular, no information is available on the overall coverage of antenatal care and the percentage of deliveries attended by trained health personnel. Equally, lacking is the information regarding how the health service factors such as access affect utilisation of maternal health care in the District.

The 1998 Kenya Demographic Survey results shows that a large number of births in the Western province (73 per cent), in which Teso district falls, took place at home yet for 92 per cent of the births their mothers had received antenatal care from medical personnel [28]. A study carried out in the old Busia district in the early 1980s indicates that in spite of existence of modern health facilities, the majority of births in the district took place at home without professional assistance. The factors responsible for this state of affairs are yet to be identified. This study focuses on antenatal care and where and in whose care women in Teso District deliver their children.

The lack of information on coverage, patterns and determinants of variation in use of maternal health care services hampers effective health planning, selection and development of corrective interventions in the district. Therefore, the findings of this study should help health planners, policy makers and program managers develop service delivery strategies that are responsive to the health needs of all expectant mothers, in particular, target women who may be currently left out by the existing maternal health care programs. Improvement of the delivery and utilisation of these programs will not only significantly

contribute to the improvement of the welfare of women and their children but also to a reduction in maternal morbidity and mortality in the district. Available statistics indicate that maternal mortality for Teso District is very high; the study carried out in 1996 estimated maternal mortality rate for both Busia and Teso districts at 1000.3 per 100,000 live births [20]. Furthermore, the study will, to some degree, establish the extent of implementation of maternal health programs in the district.

Objectives

The objectives of this paper are:

- To establish the level of awareness of antenatal care.
- To establish the timing of ante natal clinic visits.
- To establish the level of utilisation of maternal health care.
- To identify the main service providers.
- To identify some of the barriers to the utilisation of maternal health care.

Methodology

Source of data

This paper uses the data and information collected in a study carried out in Teso District between the year 2000 and 2001. Three surveys were carried out; two of them focusing on women in the reproductive age and the other was a health facility survey. The main survey covered 1200 women selected using stratified random sampling procedure. The main survey covered four locations in Amukura Division and three locations in Amagoro Division. Kotur, Aremit and Akoreet locations were covered in Amukura Division whereas in Amagoro Division, Kocholya, Kokare, Okuleu and Amagoro locations were covered. The other survey on women was a follow-up, covering only 213 women who reported during the main survey that they were pregnant. The questionnaires used in these surveys had both closed and opened questions.

The health facility survey covered 5 health facilities in the study area. It sought to establish the strengths and weaknesses of the health facilities in the area. It used a detailed questionnaire that was similar in many respects to the one used in the

1999 Kenya Service Provision Assessment [47]. In-depth interviews with purposively selected health personnel were also held at each facility. The project also collected information from all the traditional birth attendants in all the locations that were covered in the study. In total 14 focus group discussion sessions were held with 109 traditional births attendants in the seven study locations.

Data analysis

Simple percentages and cross-tabulations are the major tools of data analysis. Qualitative information is analysed descriptively, paying attention to the issues and matters that were mentioned by the majority of the informants and capturing any unique experiences reported.

Results

Awareness of antenatal care

The level of awareness of antenatal care among the study population was fairly high. The majority (98%) of the 1200 respondents were aware of antenatal care. About 62 per cent of the respondents correctly defined antenatal care as health care given to expectant mothers during pregnancy. The level of awareness of antenatal care did not vary according to the respondent's age, education, marital status and location of residence. The majority of the respondents were aware of the importance of attending antenatal clinic. Respondents identified five main functions or roles of attending antenatal clinic as follows:

- Detecting risk factors in the expectant mother
- Treating any diseases/infections
- Enabling mothers to get advice on diet/nutrition
- Enabling mothers get immunised against tetanus infection
- Monitoring the progress of the pregnancy

The most frequently mentioned role of attending of antenatal clinic was that it enabled the expectant mother to get immunised against tetanus infection. This was mentioned by 73 per cent of all the respondents. The least mentioned role was that attendance of antenatal clinic assists in monitoring of the progress of the pregnancy. Only 24 per cent

of all the respondents mentioned all the four roles or functions of attending antenatal clinic.

Approval of attendance of antenatal clinic

The results obtained indicate that the vast majority of the respondents approve of attendance of antenatal clinic. 99 per cent of them approved of the attendance of antenatal clinic. This high level of approval is evident in all age groups, levels of educational attainment, marital status and locations of residence.

Similarly, the results indicate that most husbands / partners approved of the attendance of antenatal clinic by their spouses. About 91 per cent of all the respondents indicate that their husband/ partners approved of attendance of antenatal clinic. However, there were slight variations in the level of spousal approval by location. On the average, husbands in Amagoro, Akoreet and Kocholya locations were slightly less likely to approve the attendance of antenatal clinic by their spouses. Husbands in Okuleu, Aremit, Kokare and Kotur locations were slightly more likely to approve the attendance of ante clinic by their spouses. These results indicate that most husbands/partners encouraged their spouses to attend antenatal clinic. About 80 per cent of all the respondents indicated that their husband/ partners encouraged them to attend antenatal clinic whether they were expectant. These results suggest that husbands in Amagoro, Akoreet, Aremit, Kotur and Kocholya locations were slightly less likely to encourage their wives to attend antenatal clinic. On the other hand husbands in Okuleu and Kokare locations were slightly more likely to encourage their spouses to attend antenatal clinic.

Level of utilisation of maternal health care

Tetanus toxoid injection coverage

These results indicate a high coverage of tetanus immunisation among the study population. Nearly 96 per cent of the 1170 respondents received tetanus injection during their previous pregnancy. There were no significant variation in the uptake of tetanus injection by age, location and marital status. However, the more educated mothers were more likely to have a tetanus injection than the no or less educated ones.

Antenatal check-ups

The results obtained indicate that most expectant women in the study area do go for antenatal check-ups. 86 per cent of the 1200 respondents had an antenatal check-up in their previous pregnancy or current pregnancy. However, they sought antenatal late in their pregnancy. About 14 per cent of the 1170 respondents who had a previous pregnancy did not have an antenatal check-up. As in the case of tetanus injection, no significant variations were apparent in relation to age, education and marital status. There were significant variations by location. Women in Kotur location were depicted as less likely to go for antenatal check-ups. Only 56 per cent of them sought antenatal check-up during their previous pregnancy.

Source of antenatal care

Nurse / midwife and TBAs were the main providers of antenatal care in the study area. The majority of respondents (65%) obtained their antenatal care from nurse / midwife and 24 % of them obtained their care from TBAs. Doctors provided antenatal care for only 8.7 per cent of the respondents. There were no significant variations according to the respondents' age and education in the choice of antenatal care provider were apparent. However, there were variations in the choice of providers on the basis of location. Women resident in Amagoro and Kocholya locations were more likely to seek antenatal care from a doctor. Women in Okuleu location were more likely to consult a TBA for antenatal care.

The timing and number of antenatal visits

Antenatal care can be more effective in preventing adverse pregnancy outcome when it is sought early in the pregnancy, i.e. during the first three months of the pregnancy, and continues regularly until delivery. Respondents were asked 'How many months of pregnancy were you when you first saw someone for antenatal check on the pregnancy? The vast majority (67%) of the 1170 respondents made their first antenatal visit during the second trimester of their pregnancy. A sizeable percentage (20.4 %) made the first visit during the third trimester. The respondents who made their antenatal visits late cited lack of health facilities in the neighbourhood, lack of money to meet user charges and travel costs, doubts about the efficacy of modern ante natal care and high opportunity

cost as the main reasons for not going to the antenatal clinic early in the pregnancy.

Information regarding the number of antenatal visits was collected only during the follow-up survey. Only 165 of the 213 respondents indicated the number of visits they made during their most recent pregnancy. On the basis of this information, the average number of antenatal visits among the study population is 4.31 and ranged from a minimum of one to a maximum of eleven, with a standard deviation of 2.59. The mode was 3 visits and the median number of antenatal visits was 4.0, which is far fewer than the recommended number of 12 antenatal clinic visits. 9.4 per cent of the 165 respondents made only one antenatal clinic visit, about 32.5 per cent made 2-3 visits and 58.1 per cent made at least 4 antenatal visits.

These results suggest that the majority of the expectant women in the study area do not seek antenatal care early in their pregnancy and make on the average 4 antenatal visits which are one third of the recommended number of antenatal visits. This makes it difficult for the maximum benefits of antenatal care to be realised.

Place of delivery

The results indicate that the majority (76%) of the 1170 respondents delivered at home. Only 24 per cent of the respondents delivered their babies in a health facility. In general, young women were more likely to deliver at a health facility than the older women. Similarly, the more educated were more likely to deliver in a health facility. Similarly, women who had more contacts with the health facilities in terms of the number of antenatal clinic visits were more likely to deliver in a health facility than the women who have less or no antenatal clinic visits. Variation in the type of place of delivery was clearly evident in relation to the location of residence. Slightly over half of all the mothers in Amagoro location delivered at a health facility. Okuleu, Kokare and Kotur locations also had slightly high percentages of women who delivered in a health facility. Aremite and Akoreet locations were really worse off.

Access to health facility was mentioned as the main factor in the choice of place of delivery. Modern health services were either not available or were not accessible to the majority of the study population. Hence most of the child deliveries

took place at home. Many of the respondents discussed the problems local people encountered in seeking maternity and other health services. The problems included lack of ambulances, lack of quick public transport, lack of maternity clinics in the neighbourhood, lack of trained traditional birth attendants, long travel distance to nearest maternity clinic, and impassable rural access roads during the rain season. Among the 1200 respondents, the average travel distance to nearest health facility that offered both antenatal and delivery care was 10.2 kilometres. Lack of access to health facilities is a common problem in study area and neighbouring districts [48]. Access was further constrained by lack money and transportation. Except for Amagoro, all the other locations

covered in this study were poorly serviced by public transport. Most women who delivered at home gave these as the main reasons for not going to the health facilities. Another reason for delivering at home mentioned by the majority of respondents was inability to meet the expensive user charges and associated costs, the low quality of service offered at the local health facilities, most local facilities do not provide water and food to in-patients and the availability and accessibility of cheap and compassionate traditional birth attendants.

At the time of the study there were nine health facilities providing maternal health care in the study area. In the sampled locations the situation was as summarised in Table 1 below.

Table 1: Distribution of health facilities, TBAs and female population (15-49 years), Teso District, 2001

Location	Number of TBAs identified	Number of health facilities	Estimated female population (15-49 years)	Number of HHs	Size location (Sq. Kms)
Amagoro	12	4 ^a	936	1056	11.8
Okuleu	8	0	688	666	15.0
Kocholya	21	1 ^b	941	903	15.5
Kokare	15	0	615	607	13.4
Kotur	17	0	1375	684	15.8
Aremit	24	0	1228	1312	18.4
Akoreet	12	1 ^c	1050	1168	23.2
Total	111	6	6814	6396	123.1

Note:a= these are small-sized private clinics that offer antenatal care but no delivery care. b = c District Hospital and Dispensary that offer antenatal care but no delivery care. HHs stands for households.

Source: Field notes and FGD reports.

Antenatal care was available in all the five health facilities. Four of the five health facilities were offering delivery care as they had the staff, equipment for normal delivery, and in-patient beds. However, all the facilities included in this study were not able to provide most of the elements included in the basic obstetric emergency care and comprehensive obstetric emergency care. They did not have

the capacity to respond and manage obstetric complications, as they did not have the relevant staff, medical supplies and equipment. Neither did they have effective emergency referral systems as they lacked the capacity to transfer women rapidly in the event of an obstetric emergency. They did not have reliable transport and or a means of communication by which to summon help.

This means that expectant women requiring obstetric emergency care have to seek for the care in the neighbouring districts. Lack of access has been found to limit utilisation of maternal health care in many societies [19, 36, 41, 42, 43, 44, 46]. Similarly, poor quality of care has been found in the literature to limit utilisation of maternal health care [23, 36].

Assistance at delivery

In the preceding section, it was indicated the majority of the expected mothers in the study area delivered at home. Usually mothers who deliver outside health facilities are more likely to be attended to at delivery by non-medical or health personnel. As expected the results obtained indicate that most of the 1170 respondents gave birth without assistance of trained medical personnel. Only 24 percent of the respondents were assisted either by a doctor or a nurse/midwife. The traditional birth attendants (TBAs) attended to 45 percent of the respondents. They were the largest single provider of the delivery services. Relatives were the second largest source of assistance during delivery. They were then followed by nurses/midwives. A doctor delivered eight percent of the respondents. About 12 per cent of the respondents delivered on their own.

The results indicated that older women were more likely to receive no assistance at delivery. The young were as likely as the old to seek assistance of the traditional birth attendants during labour and delivery. The more educated women and women resident in Amagoro location were more likely to seek assistance of a doctor or a nurse/midwife. TBAs were the main providers of delivery services in Aremit, Akoreet, Okuleu and Kokare locations.

Among the study population, the type of place of delivery primarily determined the choice of the type of assistance at delivery. Non-medical personnel attended to mothers who delivered at home whereas those who delivered in health facilities were delivered by nurses or doctors. The respondents gave the same reasons for choice of type of place of delivery and type of assistance at delivery.

Conclusion

The results reported in this paper indicate that most respondents in the study area were aware of the importance of antenatal care, the majority seek ante care but late in their pregnancy, and that most of the childbirths took place at home mainly because of lack of access, inability to meet user charges and associated costs, the poor services offered at the local health facility, and the availability of cheap and more accessible alternative care providers (the TBAs). Traditional birth attendants and nurse midwives were the main providers of antenatal care and delivery care. The obstacles to utilisation of maternal health care were manifold. The major obstacles were lack of access, poverty, exorbitant user charges and associated costs, and poor services offered at the local health facilities. Reducing or removing these barriers would result in increased utilisation of maternal health care in the study area.

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References

1. Scrimshaw SCM. Infant mortality and behaviour in the regulation of family size. *Population and Development Review*. 1978; 4(3): 383-401.
2. World Health Organisation. The incidence of low birth weight; a critical review of available information. *World Health Statistical*. 1980; 23-45.
3. Trussell J and Menken J. Estimating Levels, Trends and Determinants of Child Mortality in Countries with Poor Statistics. *Population and Development Review* 10. Supplement, 1984: 325-346.
4. Rosenfield A and Maine D. Maternal mortality: a neglected tragedy. Where is M in MCH? *The Lancet*, 1985, 13:

- 83-85.
5. Herz B and Measham A. The Safe Motherhood Initiative: Proposal for Action, World Bank Discussion Paper, No. 9, Washington, D.C. 1987.
 6. Halstead SB; Walsh JA, and Warren KS (eds), Good Health at Low Cost. New York: Rockefeller Foundation, 1985; p1-4.
 7. Caldwell JC. Routes to low mortality in Developing Countries. *Population and Development Review*. 1986; **12**(2): 171-220.
 8. Nag M. Impact of social and economic development on mortality: A comparative study of Kerala and West Bengal' in S.B. Halstead, J. A. A. Walsh and K. S. Warren, 1985. Good Health at Low Cost, Proceedings of a Conference held at the Bellagio Conference Centre, Bellagio, Italy: 1985; p57-77.
 9. United Nations. Socio-economic Differentials in Child Mortality in Developing Countries. ST/ESA/SER.A/97.1985
 10. Orubuloye I and Caldwell JC. The impact of public health services on mortality: a study of mortality differentials in a rural area of Nigeria. *Population Studies*. 1975; **29**(2): 254-272.
 11. Mbacke C and van de Walle E. Socio-economic factors and use of health services as determinants of child mortality. In E. van de Walle, G. Pison and M. Sala-Diakanda (eds), Mortality and Society in sub-Saharan Africa. Clarendon Press, Oxford. 1992; p123-143.
 12. Ewbank DC and Gribble JN (eds), Effects of Health Programs on Child Mortality in Sub-Saharan Africa. National Academy Press, Washington D.C., 1993; p25-50.
 13. Becker SR; Diop F and Thornton JN. Infant and child mortality in two counties of Liberia: results of a survey in 1988 and trends since 1984. *International Journal of Epidemiology*. 22 supplement 1. 1993, S56-63.
 14. Kwast BE; Rochat RW and Kidane-Mariam W. Maternal Mortality in Addis Ababa, Ethiopia. *Studies in Family Planning*. 1986; **17**(6) 288-301.
 15. Mhango C; Rochat R and Arkutu A, Reproductive Mortality in Lusaka, Zambia *Studies in Family Planning*. 1986; **17**(5): 243-251.
 16. Alauddin M. Maternal Mortality in Rural Bangladesh: The Tangail District. *Studies in Family Planning*. 1986; **17**(1): 13-21.
 17. Unicef, The State of World's Children, 1993. United Nations: New York.
 18. World Health Organisation (WHO). Expanded Programme on Immunisation: Tetanus Control: *Weekly Epidemiological Record*. 1987; **50**:380-383.
 19. Obermeyer CM and Potter JE. Maternal Health Care Utilisation in Jordan: A study of Patterns and Determinants. *Studies in Family Planning*. 1991; **22**(3): 177-187.
 20. Population Studies Research Institute (PSRI) and UNICEF. Kenya Maternal Mortality Baseline Survey 1994: Vol. One, PSRI, University of Nairobi. 1996; p30-60.
 21. Massawe S; Urassa E; Lindmark G; Moller B and Nystron L. Anaemia in pregnancy: a major health problem with implications for maternal health care. *African Journal of Health Sciences*. 1996; **3**: 126-132.
 22. Stewart MK; Stanton CK Ahmed O. Maternal Health Care Demographic and Health Surveys Comparative Studies No. 25, Macro International Inc. Calverton, Maryland USA. 1997; p10-19.
 23. Nhindhiri P; Mujanja S; Zhanda I; Lindmark G; Moller B and Nystron L. A community-based study on utilisation of maternity services in Zimbabwe. *African Journal of Health Sciences*. 1996; **3**: 120-125.
 24. National Council for Population and Development (NCPD), Central Bureau Statistics, and Macro International Inc. Kenya demographic and Health Survey 1993. Calverton: Maryland. USA, 1994: p140-149.
 25. Aggrawal VP. Obstetric emergency referrals to Kenya National Hospital. *East African Medical Journal*. 1980; **57**(2): 144-147.

REVIEW ARTICLES

26. Makokha AE. Maternal mortality-Kenya National Hospital. *East African Medical Journal*. 1980; **57**(7): 451-460.
27. Ngoka WM. and Mati JKG. Obstetric aspects of adolescent pregnancy. *East African Medical Journal*. 1980; **57**(2): 124-130.
28. National Council for Population and development (NCPD), Central Bureau Statistics, and Macro International Inc. (1999). Kenya demographic and Health Survey 1998. Calverton: Maryland, USA, 1999; p229-249.
29. Stewart K and Elisabeth Sommerfelt A. Utilisation of Maternal health Services A Comparative Study Using DHS Data Demographic and Health Surveys World Conference: August 5-7, Washington, DC. 1999. p1645-1667.
30. Leslie J and Gupta GR. Utilisation of Formal Services for Maternal Nutrition and Health care in the Third World. Washington: International Centre for Research on Women. 1989.
31. Adenkule C; Filipi V; Grahan W; Onyemunwa P and Udjo E. Pattern of maternal health care among women in Ondo State, Nigeria, Determinants of Health and Mortality in Africa, ed. Allan G. Hill, Demographic and Health Surveys, Further Analysis Series No: 10.1990; p1-45.
32. Chowdhury S. Determinants of health care utilisation in rural Bangladesh. Unpublished PhD thesis, School of Hygiene and Public Health, John Hopkins University. 1986, p60-98.
33. Niraula BB. Use of health services in Hill villages in Central Nepal. *Health Transition Review*. 1994; **4**(2):151-166.
34. Wong E; Popkin B; Guilkey D and Akin J. Accessibility, quality of care and prenatal care use in the Philippines', *Social Science and Medicine*.1987; **24**(11): 927-944.
35. Kakkar MU; Sharma; Kabra S and Kakkar S. Availability of antenatal and Peri-natal care in an ICPDS area. *Indian Paediatrics*. 1995; 597-9.
36. Basu AM. Cultural Influences on Health Care Use: Two Regional Groups in India. *Studies in Family Planning*. 1990; **21**(5): 275-286.
37. Greer G. Sex and Destiny: The Politics of Human Fertility. New York, Harper and Row. 1984, p85-98.
38. Randall S. Multi-Method Perspectives of Tamasheq Illness: Care, Action and Outcome. In The Health Transition: Methods and Measures. J. Cleland and A. G. Hill, (Eds): 1989, p329-342.
39. Reynes J. Women in Transition: Patterns of Pre-natal Care in Semi-rural Philippines. *Journal of South East Asian Studies*. 1985; **16**(2): 292-303.
40. Sleinger D. The Utilisation of Preventive Medical Services by Urban Black Women: The Growth of Bureaucratic Medicine: An Inquiry into the Dynamics of Patient Behaviour and the Organisation of Medical Care (Ed) D. Mechanic, London: John Wiley and Sons. 1976; p25.
41. Young J. Medical Choice in a Mexican Village. New Brunswick: Rutgers University Press. 1981; p30-56.
42. Mersnissi F. Obstacles to Family Planning in Morocco. *Studies in Family Planning*. 1975; **6**(12): 218-215.
43. Okafor CB and Rizzuto RR. Women's and Health Care Providers' Views and of Maternal Practice and Services in Rural Nigeria. *Studies in Family Planning*. 1994; **25**(6) 353-361.
44. Okonofua FE; Abejide A and MaKanjalo RA. Maternal Mortality in Ile-Ife, Nigeria: A Study of Risks. *Studies in Family Planning*. 1992; **23**(5): 319-324.
45. Okafor CB. Availability and Use of Maternal and Child Health Care in Rural Nigeria. *International Journal of Gynaecology and Obstetrics*. 1991; **34**: 331- 346.
46. World Health Organisation. WHO Interregional Meeting on Prevention of Maternal Mortality, Geneva, 11-15 November 1985. Unpublished report WHE/86.1.
47. Ministry of Health, National Council for Population and Development, and ORC

REVIEW ARTICLES

Macro, Kenya Service Provision Assessment Survey, 1999. Calverton, Maryland, USA. 2000

48. Jensen An-Magritt and Juma Magdalene N. Juma, 1989. Women, Childbearing and Nutrition: A case study from Bungoma, Kenya. Norwegian Institute for Urban and Regional Research, Oslo. 1989; p245-246.